

CLAIMS

1. An exhaust gas aftertreatment system for an internal combustion engine exhaust, the system comprising:

5 an Active Lean NO_x catalyst (ALNC);
 an oxidation catalyst coupled downstream of
 said ALNC; and
 a selective catalytic reduction (SCR) catalyst
 coupled downstream of said oxidation catalyst.

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2. The system as set forth in Claim 1 wherein the internal combustion engine exhaust is a diesel engine exhaust.

15 3. The system as set forth in Claim 2 further comprising a particulate filter coupled downstream of said SCR catalyst.

4. The system as set forth in Claim 3 further comprising
20 a first reductant injection system adapted to inject hydrocarbon into an exhaust gas stream entering said ALNC.

5. The system as set forth in Claim 4 further comprising
25 a second reductant injection system adapted to inject aqueous urea into an exhaust gas stream entering said SCR catalyst.

6. A method for controlling a temperature of an oxidation catalyst coupled downstream of an Active Lean NOx catalyst (ALNC), comprising:

5 providing an indication that the ALNC temperature is above a first predetermined temperature; and

10 in response to said indication controlling the temperature of the oxidation catalyst by
 adjusting an amount of reductant in an exhaust gas mixture entering the ALNC.

7. A method for controlling a temperature of an oxidation catalyst coupled downstream of an Active Lean NOx catalyst (ALNC) during cold start, comprising:

15 providing an indication that the ALNC temperature is above a first predetermined temperature; and

20 in response to said indication adjusting an amount of reductant in an exhaust gas mixture entering the ALNC thereby raising the temperature of the oxidation catalyst above a second predetermined temperature.

25 8. A method for controlling a temperature of an oxidation catalyst coupled downstream of an Active Lean NOx catalyst (ALNC) during cold start, comprising:

30 injecting a predetermined amount of reductant into an exhaust gas stream entering the ALNC when the oxidation catalyst temperature is above a predetermined temperature; and

increasing reductant injection into the ALNC thereby causing the oxidation catalyst temperature to reach said predetermined temperature otherwise.

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9. An exhaust gas aftertreatment system for an internal combustion engine exhaust, the system comprising:

10 an Active Lean NOx catalyst (ALNC); and
a selective catalytic reduction (SCR) catalyst coupled downstream of said oxidation catalyst.

10. An emission control system, comprising:

15 an internal combustion engine;
an Active Lean NOx (ALNC) catalyst coupled downstream of said engine;
an oxidation catalyst coupled downstream of said ALNC;
a urea-based SCR catalyst coupled downstream of said oxidation catalyst; and
20 a computer storage medium having a computer program encoded therein, comprising:
code for providing an indication that said SCR catalyst is degraded; and in response to said indication, discontinuing urea
25 injection into said SCR catalyst and injecting a predetermined amount of reductant into an exhaust gas stream entering said ALNC wherein said predetermined amount of reductant is based
30 on an amount of NOx in said exhaust gas mixture entering said ALNC.